REMARKS

Claims 1 through 27 continue to be in the case.

Claims 5 and 8 are being amended.

The Office Action refers to *Claim Rejections - 35 USC § 112*

Claims 5 and 8 - 27 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "plastic foil" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 as amended is dependent on claim 3 and thereby deemed to provide proper antecedent basis.

Claim 8 stands rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: it is unclear as what is the intended meaning of "perturbation switch on" in line 6.

Is the perturbation a signal response or other change in the gas being measured?

Claim 8 has been amended by inserting the word "turning".

The Office Action refers to Claim Rejections - 35 USC § 102

Claims 1, 2, 4, 6 and 7 stand rejected under 35 U.S.C. 102(b) as being anticipated by Grace et al. (U.S. Pat. No. 4,911,892). Regarding claims 1, 2, 4 and 7, Grace et al. teach a gas sensor comprising a sensor element having a gas sensitive layer (metal oxide film, 34) and wherein the sensor element is electrically heatable with a heating structure (platinum film heater, 28), and wherein the sensor element (34) is disposed in a casing (non-porous glass layer, 32). Grace et al. teach that the casing (32) has a diffusion layer (porous sintered glass layer, 52). It is inherently anticipated that the glass material of which the diffusion layer (52) and the casing (32) is made, is thermally insulating (see col. 5, lines 20 - 68; col. 6, lines 1 - 65; figures 2, 2A, 4 & 5).

The rejection is respectfully traversed.

According to the reference Grace et al., the element 32 is not a casing but instead a glass layer 32 (reference Grace et al., column 5, line 36 and 43).

No casing as required in claim 1 of the present application is taught in the Grace et al. reference.

Claims 8 and 9 stand rejected under 35 U.S.C. 102(b) as being anticipated by Raff et al. (U.S. Pat. No. 4,463,594). Regarding claim 8, Raff et al. anticipate a method for operating a sensor element, wherein the method is characterized in that the temperature of the sensor is automatically controlled and a temperature set-point value or range is varied by a perturbation value switch, such as those sensor output signals resulting from lean or rich operating conditions, depending upon the behavior of the sensor signal. Raff et al. teach that the sensor can be used in temperature ranges, which are high, as well as those temperature ranges which are low, while obtaining the same control accuracy (see col. 2, lines 5 - 51). Raff et al. teach that the output signal of the sensor is changed if the effluent gas shifts from a lean condition to a rich condition (see col. 2, lines 53 - 63). Regarding claim 9, Raff et al. teach that the short evaluation time of the signal can be obtained by utilizing a comparator, which tests the temperature signal with respect to a predetermined reference (see col. 3, lines 37 - 56).

Applicant respectfully disagrees.

Claim 8 as amended turn on a perturbation value switch and thereby changes the set point value. Raff et al. Do not teach anything about turning a perturbation value switch on and thereby changing a set point value.

The Office Action refers to Claim Rejections - 35 USC § 103.

Claims 3 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Grace et al. in view of Klass et al. (U.S. Pat. No. 3,864,628). Grace et al. do not specifically teach the incorporation of a gas-permeable plastic foil, or a gas-permeable Teflon membrane or filter. Grace et al. do teach that the sensing apparatus is used to determine the presence and concentration of selected polluting, toxic and combustible gases (see col. 4, lines 5 - 15). Klass et al. teach that different gases have different characteristic time-responses with particular membranes. Such membranes are generally selected so that the permeation of the gas to be sensed is high relative to the permeability constants of the other gases which may be present in a gas mixture. Klass et al. teach a gas sensor which incorporates the use of a gas-permeable Teflon membrane in a sensor used in the detection of hydrogen gas (see col. 3, lines 47 - 68;

col. 4, lines 1 - 57). Furthermore, the Courts have held that the selection of a known material, based upon its suitability for the intended use, is within the ambit of one of ordinary skill in the art. See *In re Leshin,* 125 USPQ 416 (CCPA 1960). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the use of a Teflon membrane, as taught by Klass et al., with the sensing apparatus, as taught by Grace et al., in order to provide for effective hydrogen gas sensing.

Applicant respectfully disagrees.

Claim 1 of the present application requires that a casing (40) exhibits a diffusion layer (47) and claim 3 says that the diffusion layer is a gas permeable plastic foil and claim 5 says that the foil is made out of Teflon.

Thus, the applicant requires in claim 3 a casing (40) exhibiting a plastic foil. In contrast the Klass et al. reference teaches in column 3, lines 48 to 50 that characteristic time lags are determined for preselected gas permeable membranes and known gases through precalibration. Thus, Klass et al. clearly fail to teach the casing exhibiting a gas permeable elastic foil.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Abthoff et al. teach a gas sensor comprising a protective tube made of either a sintered metallic or ceramic material. Addegio teaches a metal oxide sensor for detecting hydrocarbons. Akatsuka teaches an oxygen sensor incorporating the use of a Teflon filter. Advani et al. teach a gas measurement method for metal oxide gas sensors which incorporates the use of thermal cycling. Nielsen teaches method and means for temperature compensation in exhaust gas sensor measurements. Kushida et al. teach a circuit for converting a temperature dependent input signal to a temperature independent output signal.

Reconsideration of all outstanding rejections is respectfully requested.

All claims as presently submitted are deemed to be in form for allowance and an early notice of allowance is earnestly solicited.

Respectfully submitted,
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